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## Claims

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1. Device (20) for receiving signals in a wireless cellular orthogonal frequency division multiplex (OFDM) system, in which data symbols are transmitted in frequency subcarriers and timeslots, comprising

10 channel estimation means (21) for performing a channel estimation on the basis of received pilot symbols, whereby the channel estimation for data symbols between pilot symbols is performed by means of a filter, said filter being selected from a set of filters on the basis of an interference reference value.

15     2. Device (20) according to claim 1,  
       **characterized in,**  
       that said filter is selected from a set of filters on the basis of an estimated carrier to  
       interference ratio.

20     3. Device (20) according to claim 2,  
       **characterized in,**  
       that the estimated carrier to interference ratio at the frequency subcarrier and the  
       timeslot of the data symbol to be channel estimated is used for the filter selection.

25 ~~4. Device (20) according to claim 2 or 3,~~  
**characterized in,**  
 that the estimated carrier is a wanted carrier power value at the frequency subcarrier  
 and the timeslot of the data symbol to be channel estimated.

30 5. Device (20) according to claim 3 or 4,  
characterized in,  
that if said filter to be selected is to be a frequency filter, said filter is further selected  
on the basis of a difference vector between frequency subcarriers adjacent to the  
frequency subcarrier of the data symbol to be channel estimated.

35 6. Device (20) according to one of the claims 3 to 5,  
characterized in,  
that if said filter to be selected is to be a time filter, said filter is further selected on the  
basis of a Doppler frequency of the estimated channel.

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7. Method for channel estimation in a wireless cellular orthogonal frequency division multiplex (OFDM) system, in which data symbols are transmitted in frequency subcarriers and timeslots, whereby

- 5 a channel estimation on the basis of received pilot symbols is performed, whereby the channel estimation for data symbols between pilot symbols is performed by means of a filter, said filter being selected from a set of filters on the basis of an interference reference value.

8. Method according to claim 7,  
10 **characterized in,**  
that said filter is selected from a set of filters on the basis of an estimated carrier to interference ratio.

9. Method according to claim 8,  
15 **characterized in,**  
that the estimated carrier to interference ratio at the frequency subcarrier and the timeslot of the data symbol to be channel estimated is used for the filter selection.

- ~~10. Device according to claim 8 or 9,~~  
20 **characterized in,**  
that the estimated carrier is a wanted carrier power value at the frequency subcarrier and the timeslot of the data symbol to be channel estimated.

11. Method according to claim 9 or 10,  
25 **characterized in,**  
that if said filter to be selected is a frequency filter, said filter is further selected on the basis of a difference vector between frequency subcarriers adjacent to the frequency subcarrier of the data symbol to be channel estimated.

- 30 12. Method according to one of the claims 9 to 11,  
**characterized in,**  
that if said filter to be selected is to be a time filter, said filter is further selected on the basis of a Doppler frequency of the estimated channel.

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